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HARTCROWSER

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Earth and Environmental Technologies
J-2296-05

November 4, 1994

Mr. Gregory A. Rapp
Construction Services Manager
Potlatch Corporation
1100 Railroad Avenue
P.O. Box 386
St. Maries, Idaho 83861

Re: Laboratory Results for Excavated Soils
Avery Landing Recovery System

Dear Mr. Rapp:

This letter presents the laboratory analytical results for samples of soil excavated during construction of the recovery system at the Avery Landing site. Sampling and analysis were conducted based on the Remediation Plan (Exhibit B of the Consent Order), as agreed to by John Sutherland and Brian Painter of the Idaho Division of Environmental Quality (IDEQ) at the pre-construction meeting on August 10, 1994.

The sampling and analysis of excess excavated soil were conducted as follows:

- Soil samples were collected at a rate of one per 100 cubic yards. A total of 16 samples (SP-1 through SP-16) were collected although soils represented by six of the samples (SP-1 through SP-6) were subsequently used as backfill. Approximately 1,000 cubic yards of soil remain stockpiled at the site, represented by samples SP-7 through SP-16. The approximate sampling locations on the soil stockpile are shown on Figure 1.

- The 16 samples were analyzed for Total Petroleum Hydrocarbons (TPH) by Method 418.1, by Laucks Testing Laboratories, Inc., of Seattle, Washington. The TPH results are presented in Attachment A.

- The soil sample having the highest TPH concentration (SP-13) was analyzed for total concentrations of the eight RCRA TCLP metals, PCBs by Method SW8080, and base

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neutral and acid extractable organics (BNAs) by Method SW8270. These results are presented in Attachment B.

The analytical results show that metals and PCBs were not detected at elevated concentrations. Although the highest TPH concentration was 3,400 mg/kg, the polynuclear aromatic hydrocarbon (PAH) compounds in this sample were below 1 mg/kg. Based on the primary source of contaminants at the site (bunker C/heavy-end petroleum hydrocarbons), this relatively low PAH concentration indicates that the stockpiled soils do not represent grossly contaminated soils from the site. Based on these results, the stockpiled soils do not constitute a hazardous waste.

The remediation plan for the site requires that soil not constituting a hazardous waste but containing over 1,000 mg/kg TPH be landfarmed onsite. TPH results for soil currently stockpiled range from 250 to 3,400 mg/kg, with 8 of 10 samples exceeding 1,000 mg/kg. The average TPH concentration is 1,695 mg/kg.

We recommend that Potlatch and IDEQ consider landspreading rather than landfarming of the stockpiled soil, based on the following reasons:

- Landspreading is a passive remediation method which decreases petroleum hydrocarbon concentrations in soil through biological action and aeration. Landspreading should be able to attain the 1,000 mg/kg TPH criteria within one to two years. While a work plan and follow-up monitoring would still be required for landspreading, the additional effort of lining, tilling, and fertilization typically required for landfarming would be eliminated.

- The stockpiled soils are representative of existing surficial soils at the site since they have been excavated from the shallow portions of the recovery trenches. Placement back on the site should therefore not result in additional impact to the site.

Whichever remediation method is selected, activities will be scheduled for next spring because of weather conditions. A liner will be placed over the stockpiled soil to secure it for the winter.

Work for this project was performed, and this letter prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar location, at the time the work was performed. It is intended for the exclusive use of the Potlatch Corporation for specific application to the referenced property.

If additional information or clarification is required, please call Barry Kellems at (206) 324-9530.

Sincerely,

HART CROWSER, INC.

Barry Kellems

BARRY L. KELLEMS, P.E.
Associate Engineer

BK:bjg
Labdata.ltr

Attachments:

Figure 1 Sampling Location Plan

A - Certificates of Analysis, October 12, 1994
Laucks Testing Laboratories, Inc.

B - Certificates of Analysis, October 28, 1994
Laucks Testing Laboratories, Inc.